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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,308

11/16/2005

Edgar Schneider

R.302533

4783

2119

7590

07/28/2006

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EXAMINER

MCGRAW, TREVOR EDWIN

ART UNIT

PAPER NUMBER

3752

DATE MAILED: 07/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/533,308

Applicant(s)

SCHNEIDER ET AL.

Examiner

Trevor McGraw

Art Unit

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-14, 18-20, 22-25 and 27-30 is/are rejected.
- 7) ☐ Claim(s) 15-17, 21 and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 04/29/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Reference number "39" shown in Figure 1. Additionally, reference numbers 25 "Inner Chamber" and 22 "Valve Control Chamber" are designating the same region within Figure 2. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 30 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear to the Examiner as to what Applicant means

Art Unit: 3752

when stating "the throttle plate positively engages in at least some areas with a device of the nozzle..." Examiner is unsure as to what "device" Applicant is referring to as there is no clear example of a "device" in the specification to match the claimed "device" against.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-14, 18-20, 22-25 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admission of prior art in claim 11 in view of Crofts et al. (US Patent 6,293,254).

In regard to claims 11-14, 18-20, 22-25 and 27-30, Applicant admits that: an injection valve with a valve control module and an attached module which has a nozzle needle is disposed so that it can move axially in a nozzle body, wherein the valve control module adjoins the nozzle module with a throttle plate and, in the region of an end of the nozzle needle oriented toward the throttle plate, an intermediate element is provided, which is pressed against the throttle plate by means of a spring that is disposed between the intermediate element and the nozzle needle and exerts an axial force on the needle in the closing direction, wherein at least one outlet throttle is

Art Unit: 3752

provided in the throttle plate and at least on inlet throttle connected to a high-pressure region is provided, both of which throttles feed into a valve control chamber is well known in the art. Although Crofts et al. (US 6,293,254) teaches most of the prior art, it fails to teach the adjoining of the valve control module (102) and the nozzle module (106) by a throttle plate (302). Croft et al. additionally teaches where the throttle plate (302) has an enclosed raised area (Figure 6) that delimits an inner chamber (318) that constitutes delimitation for the valve control chamber (318) and contains an inlet throttle (316). It would have been obvious to one with ordinary skill in the art at the time the present invention was made to position the throttle plate (302) of Croft et al. where the valve control module (102) adjoins the nozzle module (106) to better control the needle by moving the drip prevention device (302) closer in distance to the valve seat so the positive pressure acting on the needle in the control chamber as a result of the diameter ratios of the inlet throttle (316) and the outlet throttle (314) is providing a better seal with the valve seat after the injector closes (after opening) as the shortened needle is being acted upon by more pressure force per needle length and this arrangement also makes the guide bore closer to the needle module (106) thus making the guide bores (116,140) of Crofts et al. match closer together. Furthermore, the main sleeve section (306) of the intermediate element (300) and the spring seat (308) are analogous to Applicant's disk [19] for adjusting the force of the spring between the spring and away from the throttle plate (302) and a shoulder of the nozzle needle (Figure 6).

Crofts et al. further teaches an end surface (304) of the raised conical areas of the throttle plate (302) is oriented toward the intermediate element (300) and where the

Art Unit: 3752

raised areas are conical so that a radial contact is produced between the raised areas of the throttle plate and the intermediate element. Crofts et al. fails to teach the contact area being a linear arrangement. It would have been obvious to one with ordinary skill in the art at the time the present invention was made to arrange the raised areas to contact the intermediate element in a linear manner as a design choice preference.

Claim Objections

Claim 26 is objected to because of the following informalities: "13" should be "33". Appropriate correction is required.

Allowable Subject Matter

Claims 15-17, 21 and 26 appear to be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

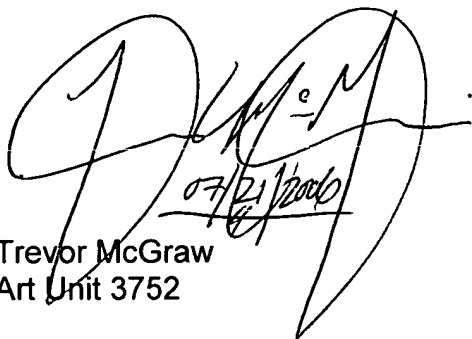
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Heinz et al. (US 6,076,800).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trevor McGraw whose telephone number is (571) 272-7375. The examiner can normally be reached on Monday-Friday (2nd & 4th Friday Off).

Art Unit: 3752


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on (571) 272-4919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Trevor McGraw
Art Unit 3752

TEM



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7/24/06